

Korea-EU Horizon Europe Researchers Networking Forum on Energy



October 15-16, 2025



The Standard, Bd Roi Albert II 30,
1000 Bruxelles





AGENDA

Time	Wednesday (15 Oct)	Thursday (16 Oct)
8:30	Opening (8:30~9:00)	-
9:00	Pitch Session (9:00~11:00)	Consortium Formulation Session 1 (9:00~10:30)
9:30		
10:00		
10:30		Break (10:30~11:00)
11:00	Break (11:00~11:30)	KR 7~11 (11:00~12:15)
11:30	Speed Dating (11:30~12:30)	
12:00		EU 13-14 (12:15~12:35)
12:30	Networking Lunch (12:30~13:30)	Networking Lunch (12:35~13:30)
13:00		
13:30	KR 1~4 (13:30~14:30)	EU 15~20 (13:30~14:30)
14:00		
14:30	Break (14:30~15:00)	Break (14:30~15:00)
15:00	EU 1~6 (15:00~16:00)	Consortium Formulation Session 2 (15:00~16:30)
15:30		
16:00		
16:30	Break (16:30~17:00)	Wrap up (16:30~17:00)
17:00	EU 7~12 (17:00~18:00)	
17:30		
18:00	Break (18:00~19:00)	
18:30		
19:00	Networking Dinner (19:00~) ※ The Chairman, Bd Bauduin 30, 1000, Brussels	
19:30		
20:00		

STEERING COMMITTEE

* The list is arranged in alphabetical order by first name.



Jongin Hong

NCP for Cluster 5
Professor Chung-Ang University

Biography

Jongin Hong is a Professor in the Department of Chemistry and a director in the Energy and Environment Institute at Chung-Ang University (CAU). He received his B.S. (1999), M.S. (2002) and Ph.D. (2005) in Materials Science and Engineering from Korea Advanced Institute of Science and Technology (KAIST). Following his doctoral studies, he pursued postdoctoral training at the Korea Institute of Science and Technology (KIST) and later joined the Department of Mechanical Engineering at the University of Pennsylvania (UPenn) as a postdoctoral fellow in 2006. From 2007 to 2010, he worked as a postdoctoral research associate in the Department of Chemistry at Imperial College London (ICL).

Prof. Hong has authored more than 125 peer-reviewed journal articles and three book chapters, establishing an international reputation in the fields of advanced materials and energy conversion. His research focuses on the design and development of next-generation solar cells and smart windows, with particular emphasis on applications in zero-energy buildings and sustainable smart cities.

In addition, Prof. Hong has actively contributed to international research collaboration and science policy. He served as the National Contact Point (NCP) for Nanosciences, Nanotechnologies, Materials and new Production Technologies (NMP) under the EU Framework Programme (FP7) during 2011-2012, and currently serves as the NCP for Horizon Europe Pillar II Cluster 5 (Climate, Energy, and Mobility) since 2025.



Sangwon Kim

Research Coordinator of Energy & Environment Cluster
Korea Institute of Science and Technology Europe (KIST Europe)

Biography

Dr. Sangwon Kim has been serving as the Research Coordinator of the Energy and Environment Cluster at the Korea Institute of Science and Technology (KIST) Europe in Saarbrücken, Germany, since 2025.

He received his B.S. and M.S. degrees from Seoul National University and his Ph.D. in Mechanical Engineering from Colorado State University in 2005.

He previously worked for five years at Hyundai Motor Group, where he was involved in the development of advanced gasoline engines.

Since joining KIST Europe in 2010, Dr. Kim has conducted research on redox flow batteries, PEM fuel cells, and hydrogen storage systems. His current research focuses on next-generation secondary batteries—including zinc-ion batteries, sodium-ion batteries, and all-solid-state batteries—as well as battery recycling and hydrogen energy technologies such as fuel cells and water electrolysis systems, which are his primary fields of expertise.

He is actively involved in building international research consortia under Horizon Europe and leads collaborative efforts with key institutions such as Forschungszentrum Jülich (FZJ), the German Aerospace Center (DLR), the Karlsruhe Institute of Technology (KIT), and the Fraunhofer Institutes in Germany, as well as KIST Headquarters, the Korea Institute of Machinery and Materials (KIMM), the National Institute of Green Technology (NIGT), the Korea Research Institute of Chemical Technology (KRICT), the Korea Institute of Energy Research (KIER), and the Korea Basic Science Institute (KBSI) in Korea, driving global partnerships in sustainable energy innovation.

His research interests include transport phenomena, heat and mass transfer, and thermodynamic analysis in electrochemical energy conversion and storage systems.

Since 2017, he has also been serving as Deputy Head at the Transfer Center for Sustainable Electrochemistry at Saarland University.

Research Area

- Hydrogen, Fuel Cell, Water Electrolysis, Next Generation Battery, Computational Fluid Dynamics (CFD), Heat Transfer

Personal link

- <https://scholar.google.com/citations?user=ToDZZ60AAAAJ&hl=en>

INVITED PARTICIPANTS

* The list is arranged in alphabetical order by first name.

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4	Christian Beinert	Head of Department Polymer Processing and Component Design	Fraunhofer Institute for Structural Durability and System Reliability LBF	DE	10
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16	June-Seok Choi	Research Fellow/ Representative Professor	Korea Institute of Civil Engineering & Building Technology (KICT)	KR	28
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18	Lawrence Limjuco	Research Fellow	Energy and Bioproducts Research Institute, Aston University	UK	30
19	Le Anh Nguyen Long	Assistant Professor	Twente University	NL	32
20	Lina Murauskaite	Senior Researcher	Lithuanian Energy Institute	LT	33
21	Manolya Kavakli-Thorne	Program Lead and Professor of Gamification & Simulation Technology	The Sir Peter Rigby Digital Futures Institute, Aston University	UK	34
22	Mohan Lal Kolhe	Professor in Renewable Energy	University of Agder (Norway)	NO	35
23	Moon Son	Senior Researcher/ Associate Professor	Korea Institute of Science and Technology	KR	36
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Akiko Tsurumaki

Junior Assistant Professor
Sapienza University of Rome

Biography

I received my Doctor of Engineering degree in 2015 from the Department of Biotechnology and Life Science at the Tokyo University of Agriculture and Technology (TUAT). During my doctoral studies, I was awarded a DC2 fellowship from the Japan Society for the Promotion of Science (JSPS). Since 2021, I have been serving as a Junior Assistant Professor at Sapienza University of Rome, Italy. Previously, I held positions as a Project Assistant Professor at TUAT and as a Postdoctoral Researcher at Sapienza.

My research expertise lies in the synthesis and characterization of electrolytes, ranging from conventional organic solvent systems to advanced composite materials based on ionic liquids, polymer matrices, and solid-state electrolytes. More recently, I have been working on the development of high-voltage cathode materials incorporating ionic liquids to enhance battery cycle life. In addition, I specialize in the design of task-specific ionic liquids, with applications not only in electrolytes but also in biomass dissolution, synthetic polymer dissolution, and antistatic technologies.

I have contributed to two Japanese Ministry-funded projects, collaborated with the automotive industry for eight years, and participated in national and regional research initiatives in Italy. However, due to the nature of my current position, I have not yet gained experience in EU collaborative research projects.

Research Area

My primary research focus is the development of safer electrolytes for Li/Na batteries, including ionic liquid-based, gel-type, quasi-solid-state, and all-solid-state systems. A distinctive aspect of my work is the functionalization of these electrolytes through structural tuning—both of the ionic liquids themselves and of the electrolyte phases—by carefully accounting for the interactions among their components. This approach is grounded in my extensive background in physical and organic chemistry. Although not my personal area of expertise, my laboratory also includes specialists in fuel cells, electrolyzers, Na/K batteries (with particular emphasis on high-voltage cathodes), and in-situ battery analysis.

Personal link

- <https://www.researchgate.net/profile/Akiko-Tsurumaki>

Call topic

- HORIZON-CL5-2026-09-D2-01



André Weber

Group Leader FCE & Li-Batteries
KIT, IAM-ET

Biography

I am working as senior scientist and academic councilor at the Institute for Applied Materials – Electrochemical Technologies (IAM-ET, <http://www.iam.kit.edu/et/>), an institute in the faculty of electrical engineering and information technology at the Karlsruhe Institute of Technology (KIT). Actually I am heading two research groups related to fuel cells and electrolyzers and batteries and act as the scientific manager of the “Fuel Cell Test Laboratory”, a lab designated to fuel cell system testing. My research is related to electrical testing and modeling of fuel cells and batteries, with a special emphasis on the application of electrochemical impedance spectroscopy to high performance cells since 1994. Experimental and theoretical work ranges from fundamental studies on model systems to the analysis of commercial products, aiming at an understanding of the complex coupling of electrochemical reactions and transport mechanisms with material-, microstructural- and design-parameters of these electrochemical devices. The scientific results have been published in more than 200 refereed papers resulting in a Scopus h-index above 50. I have participated in a larger number of national and European projects on electrochemical energy conversion and storage since 2000, actually my groups are involved in half a dozen national and one European project focusing on high temperature fuel cells for aviation (<https://flyeco-european-project.eu/>).

Research Area

Main research fields

- Solid Oxide Fuel and Electrolyzer Cells
- PEM fuel cells and electrolyzers
- Lithium Ion Batteries
- All Solid State Batteries

Specialization

- Impedance based Electrochemical Characterization
- Microstructure Analysis and Reconstruction
- Multiscale / Multiphysics Modelling

Publications

- [https://doi.org/10.1016/S0955-2219\(01\)00120-0](https://doi.org/10.1016/S0955-2219(01)00120-0)

- <https://doi.org/10.2109/jcersj2.16267>
- <https://doi.org/10.1038/s41560-020-0565-1>

Personal link

- https://www.iam.kit.edu/et/english/mitarbeiter_andre_weber.php
- Orcid ID: 0000-0003-1744-3732
- <https://scholar.google.de/citations?hl=de&user=IGECnVQAAAAJ>
- <https://www.linkedin.com/in/weber-andr%C3%A9-386b6999/>

Call topic



Benjamin Heyne

Head of Department

Fraunhofer Institute for Applied Polymer Research IAP

Biography

Dr. Benjamin Heyne, Head of Department “Polymers and Electronics” at Fraunhofer IAP

Benjamin Heyne joined Fraunhofer IAP in 2015, where he specializes in the development of materials, synthesis, and modification of various Quantum Dot types. He obtained his Ph.D. in Inorganic Chemistry from the University of Potsdam in 2022 with a dissertation titled “Design and Synthesis of Highly Efficient InPZnS/ZnSe/ZnS Multishell Quantum Dots and Phase Transfer via Ligand Exchange.”

Prior to returning to the Fraunhofer IAP in 2023, he gained experience as a development engineer in display and point source chip manufacturing and process optimization in the semiconductor industry. As the head of department “Polymers and Electronics” at Fraunhofer IAP, he is currently responsible for various projects related to the development of functional monomers and polymers, including polymer (ceramic) electrolytes for battery systems (BMBF funded: PCEforNB - Polymer ceramic electrolytes (PCE) for medium-temperature Na batteries; WaZABI - Customized electrodes and electrolytes to improve the rechargeability of zinc-air batteries), ion conducting polymers (BMW funded: PolyMEA - Membrane electrode assemblies (MEA) based on fluorine-free polyphenylquinoxalines and blend systems for anion exchange membrane water electrolysis) for fuel cells or water electrolysis, electrochromics, as well as charge transport materials, i.e. for OLEDs or Quantum Dot - LEDs.



Research Area

- Polymer electrolytes for solid-state batteries
- PFAS-free polymers for membranes noble-metal reduced catalysts for electrolyzers and fuel cells
- Carbon materials for GDLs
- Up-Scaling of monomer/ polymer synthesis to ton-scale
- Membrane processing (R2R)
- OPVs
- Perovskite solar cells
- Printing technologies of functional materials

Personal link

- https://www.iap.fraunhofer.de/en/research/functional_polymer_systems/polymers_and_electronics.html
- <https://de.linkedin.com/in/benjamin-heyne-4a70a618b>

Call topic

- HORIZON-CL5-2026-09-D2-01
- HORIZON-CL5-2026-03-D2-02
- HORIZON-CL5-2027-04-Two-Stage-D2-07



Christian Beinert

Head of Department Polymer Processing and Component Design
Fraunhofer Institute for Structural Durability and System Reliability LBF

Biography

Dr. Christian Beinert studied Mechanical Engineering at the Technical University of Darmstadt, where he developed a strong foundation in engineering principles and methodologies. He earned his doctorate with a focus on flow simulation in mechanical engineering, contributing valuable insights to the field.

After completing his doctoral studies, Dr. Beinert played a pivotal role in establishing the "Compoundieren" research group at the German Plastics Institute (Deutsches Kunststoff-Institut). He later took on the leadership of the Thermoplastic Processing Department at the same institute, where he focused on advancing technologies related to polymer processing.

Currently, Dr. Beinert serves as the Head of the Department for Plastics Processing and Component Design at the Fraunhofer Institute for Structural Durability and System Reliability LBF. In this role, he leads innovative research projects aimed at enhancing the performance and reliability of plastic components.

Dr. Beinert has also successfully driven several EU-funded battery projects, including OPTEMUS, GHOST, SELFIE, and SEABAT, which aim to advance battery technologies and promote sustainable energy solutions. Additionally, he is involved in the national funding project "Circulus," which focuses on battery recycling, further demonstrating his commitment to sustainability and innovation in materials engineering.

With over 20 years of experience in academic teaching, Dr. Beinert has concentrated on the development of plastic materials, sharing his expertise and fostering the next generation of engineers in the field. His contributions to both research and education underscore his dedication to advancing materials science and engineering.

Research Area

Research interests in the field of polymer engineering and battery technology focus on several key areas. One primary area is the development of thermoplastic recyclable housings for traction batteries, emphasizing sustainability and material efficiency. Additionally, there is a strong emphasis on customized flame retardancy for plastic materials to enhance safety in battery systems.

Another critical aspect is the examination of the reliability and safety of battery systems, ensuring they meet rigorous performance standards. Research also includes the long-term stability of plastics in hydrogen environments, which is essential for the development of durable components in hydrogen applications. Furthermore, exploring the possibilities of lifespan monitoring for hydrogen pressure tanks aims to improve safety and operational efficiency in the use of hydrogen as an energy carrier. These efforts contribute to advancing technologies that support sustainable energy solutions.

Personal link

- <https://www.lbf.fraunhofer.de/en/projects/lightweight-biobased-plastics.html>
- <https://www.lbf.fraunhofer.de/en/projects-products/integrative-simulation.html>
- <https://www.leistungszentrum-wasserstoff-hessen.de/en.html>
- <https://www.lbf.fraunhofer.de/en/competencies-researchdivisions/plastics/lightweight-sustainable-plastics.html>
- <https://www.lbf.fraunhofer.de/en/press-releases/lightweight-battery.html>
- <https://www.lbf.fraunhofer.de/de/projekte/iqpak-kreislauffaehige-multi-layer-verpackung.html>
- <https://www.lbf.fraunhofer.de/en/competencies-researchdivisions/plastics/digitalization-plastics-processing.html>



Call topic

- HORIZON-CL5-2027-02-D2-05: Improvement of Adaptability, Flexibility and Efficiency of Existing Recycling Processes (BATT4EU Partnership)
- HORIZON-CL5-2026-03-D2-02: Development of direct recycling processes (BATT4EU Partnership)
- HORIZON-CL5-2026-03-D3-01: Targeting key value chain components for increasing the competitiveness of renewable energy technologies in Europe



Dawid Hanak

Professor in Decarbonisation of Industrial Clusters
Net Zero Industry Innovation Centre, Teesside University

Biography

Prof. Dawid Hanak is the Professor of Decarbonisation of Industrial Clusters at the Net Zero Industry Innovation Centre, Teesside University. He holds PhD in Carbon Capture and an MBA from Cranfield University. He is a Chartered Engineer with IMechE and a Fellow of both the Chartered Management Institute and Higher Education Academy. He has over a decade of experience in process design, techno-economic and life-cycle assessment, and business modelling of greenhouse gas removal and carbon mitigation technologies. He led the successful delivery of research and commercial projects in industrial decarbonisation that attracted over £6m of funding. His work has contributed to developing next-generation engineered CO₂ removal and utilisation technologies based on solid looping cycles. He has helped multiple organisations demonstrate the feasibility of their innovative net zero processes, develop market strategies, and quantify their business emissions across all scopes. Prof. Hanak is advising the Department for Energy Security and Net Zero (DESNZ), UK Government on CO₂ capture, utilisation and storage, and carbon removal technologies as a part of the Energy and Net Zero Professional Services Framework. He also actively contributes to developing harmonised guidelines for carbon capture, utilisation, and storage assessment and holds a leadership position at the COST Action on Techno-Economic Assessment of Carbon Mitigation Technologies. His work has been featured in news articles, including New Scientist, Illuminem, and The Conversation.

Research Area

Main research fields: carbon capture, utilisation and storage; sorption-enhanced hydrogen production; synthetic fuels and chemical production via integrated CO₂ capture and utilisation; thermochemical energy storage.

Uniqueness and specialization: first principles process models with TEA/LCA under uncertainty and optimisation.

Research excellence: Erans et al. (2022), Direct air capture: process technology, techno-economic and socio-political challenges, Energy Environ Sci, 15, 1360.

Lv et al. (2021), Efficient-and-stable CH₄ reforming with integrated CO₂ capture and utilisation using Li₄SiO₄ sorbent, Sep Purif Technol, 277, 119476.

Hanak et al. (2018), Combined heat and power generation with lime production for direct air capture", Energy Convers Mang, 160, 455.

Hanak et al. (2016), Calcium looping with inherent energy storage for decarbonisation of coal-fired power plant, EnEnergy Environ Sci, 9, 971

Personal link

- <https://www.linkedin.com/in/dawidhanak/>
- <https://research.tees.ac.uk/en/persons/dawid-hanak>

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02: Next generation of renewable energy technologies (TRL4/5)
- HORIZON-CL5-2026-09-D4-08: Full-scale demonstration of heat upgrade solutions in industrial processes
- HORIZON-CL5-2027-05-D2-08: Demonstration for Long-duration Battery Energy Storage Systems (BATT4EU Partnership) TRL6/7
- HORIZON-CL5-2027-07-D3-28: Integrated Approaches for Retrofitting Infrastructures with Innovative Energy Storage Technologies (TRL6/8)



Dong Hyup Jeon

Professor
Dongguk University-WISE

Biography

Dong Hyup Jeon is a Professor at Dongguk University-WISE. He specializes in multi-scale modeling of electrochemical power sources, especially batteries and fuel cells, and now advancing into AI-assisted



lifetime prediction for energy storage devices used in electronic devices and electric vehicles. He has published more than 100 papers, patents and chapter books. He earned his Ph.D in Mechanical and Aerospace Engineering from the Seoul National University and conducted postdoctoral research in U. South Carolina and NRC Canada. He has served as Dean of Industry-Academy Cooperation Foundation in Dongguk University-WISE, Principal Research Engineer in Samsung SDI, Research Engineer in LG Chem, and Advisory Commity Member in Gyeongju City. Since 2015, he has been a member of the IEA AFC TPC Annex 37. He was honored with the Best Research Award at Dongguk University-WISE in 2021. He has led numerous funded projects including high-performance lithium-ion batteries, battery recycling, and multi-scale modeling of PEM fuel cells and SOFCs. He has a working experience over 30 years in fuel cells and 25 years in batteries.

Research Area

- Lithium-ion batteries: LBM simulation of electrolyte wettability and physics-based electrochemical modeling
- Battery recycling and reuse: AI-assisted lifetime prediction and prognostics of spent battery
- PEM fuel cells: Multiscale modeling and flow-field design
- Solid Oxide Fuel Cells: Multiscale modeling and development of an open-source CFD platform for SOFC modeling (<http://openfuelcell.sourceforge.net/>)
- Electrolysis: Oxygen bubble simulation using LBM
- Chemical Reactor: Optimum design using CFD

Representative Publications

- D. H. Jeon, J.-H. Song, J. Yun, J.-W. Lee, "Mechanistic Insight into Wettability Enhancement of Lithium-Ion Batteries Using a Ceramic-Coated Layer," ACS Nano, 17, 2023, 1305-1314. (IF: 17.1)
- J. Kim, A. Seong, Y. Yang, S. Joo, C. Kim, D.H. Jeon, L. Dai, G. Kim, "Indirect surpassing CO2 utilization in membrane-free CO2 battery," Nano Energy, 82, 2021, pp. 105741. (IF: 17.1)
- D.H. Jeon, "Wettability in electrodes and its impact on the performance of lithium-ion batteries," Energy Storage Materials, 18, 2019, pp. 139-147. (IF: 20.2)
- D.H. Jeon, S.M. Baek, "Thermal modeling of cylindrical lithium ion battery during discharge cycle," Energy Conversion and Management, 52(8-9), 2011, pp. 2973-2981. (cited 441 times)
- J.H. Nam, D.H. Jeon, "A Comprehensive Micro-scale Model for Transport and Reaction in Solid Oxide Fuel Cells," Electrochimica Acta, 51(17), 2006, pp 3446-3460 (cited 351 times)

Personal link

- <https://scholar.google.com/citations?user=p1iA4fIAAAAJ&hl=en>

Call topic

- HORIZON-CL5-2026-D2-01-02
- HORIZON-CL5-2026-D2-01-03

- HORIZON-CL5-2027-03-D2-05
- HORIZON-CL5-2027-03-D2-06
- HORIZON-CL5-2026-10-D5-11



Dong Kyu Kim

Professor
Chung-Ang University

Biography

I am a professor in the Department of Mechanical Engineering at Chung-Ang University, Republic of Korea, specializing in battery safety and thermal-fluid analysis. My current research focuses on the mechanisms and propagation of thermal runaway in lithium-ion batteries, combining physics-based modeling with experimental validation. I have developed predictive models that analyze the sequential stages of thermal runaway, incorporating both chemical reaction heat generation and combustion-induced heat release. A unique feature of my work is the capability to predict the composition and quantity of gases released during thermal runaway events, which is critical for explosion risk assessment and ventilation design.

In addition to single-cell experiments that capture thermal, pressure, and gas emission data, my modeling framework extends to module and rack levels, enabling accurate CFD simulations of thermal propagation in large-format battery systems. This multi-scale approach bridges laboratory-scale data with real-world battery applications, providing actionable insights for the design of safer electric vehicle (EV) and stationary energy storage system (ESS) batteries.

Through participation in the Horizon Europe Cluster 5 networking forum, I aim to establish collaborations that advance battery safety technologies, integrate predictive modeling into EU safety certification frameworks, and contribute to the development of high-energy, thermally resilient battery systems for e-mobility and stationary applications.

Research Area

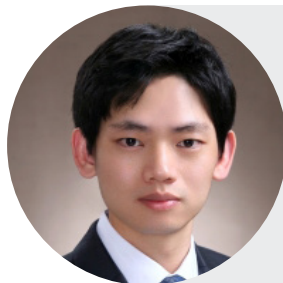
Battery safety, thermal runaway mechanisms, physics-based modeling, gas emission prediction, CFD simulation of module/rack propagation, experimental validation, safety design for EV and stationary battery systems.



Personal link

• <http://aeecs.dsso.kr/>

Call topic



Dong Woo Joh

Principal Research Engineer
Korea Institute of Energy Research (KIER)

Biography

Academic Background and Professional Experience

The Graduate School of DGIST, Daegu, Korea

Ph.D. in Energy Science & Engineering

Thesis: Advanced Engineering Toward High-Performance Intermediate-Temperature Solid Oxide Fuel Cells

Conducted comprehensive research on material development, cell design optimization, and fabrication processes to enhance the performance and durability of intermediate-temperature SOFCs.

Acquired extensive expertise in electrochemical performance evaluation, thermal management strategies, and stack integration for real-world applications.

Ongoing and Leading Projects

Development of Highly Durable SOFC Stack Technology Under Simultaneous Thermal and Load Cycling

Designing and validating SOFC stacks capable of maintaining performance stability under combined thermal fluctuation and load variation conditions, with a focus on extending operational lifetime.

Development of 600 °C-Range SOEC System Utilizing Low-Quality Industrial Waste Heat

Engineering a high-efficiency SOEC system optimized for low-grade heat sources to enable cost-effective and sustainable hydrogen production.

Core Technology Development for Ammonia-Fueled, CO₂-Free SOFC

Advancing direct-ammonia fuel utilization in SOFC systems through optimized cell materials, system design, and mitigation of nitridation-induced degradation.

Core Research Expertise and Representative Achievements

Completion of High-Performance, Large-Area Planar Cell Manufacturing Process

Successfully established fabrication protocols for large-area planar cells with superior electrochemical performance and durability.

Completion of Scalable Stack Design and Development

Designed modular, scalable SOFC stack configurations to facilitate commercial-scale deployment.

Completion of 1 kW SOFC Stack Development

Delivered a fully operational 1 kW-class SOFC stack demonstrating stable performance under long-term testing.

Ongoing Development of Stack Scale-Up Technology

Developing engineering solutions and manufacturing techniques for scaling SOFC stacks to higher power outputs while maintaining reliability.

Ongoing Development of Direct-Ammonia-Fueled SOFC Stack

Designing and testing next-generation SOFC stacks optimized for direct ammonia feeding, addressing challenges such as fuel conversion efficiency and material degradation.

Research Area

Advanced Solid Oxide Cell (SOC) Technologies

Materials for SOC Stack Components

High-Performance Cell and Stack Design

Electrochemical Analysis and Optimization

Publications

- Durability improvement of large-area anode supported solid oxide fuel cell fabricated by 4-layer sequential co-lamination and co-firing process, Journal of Power Sources, 573, 233160 (2023)
- Ultra-Fast Route to Fabricate Large-Area Anode-Supported Solid Oxide Fuel Cell via Microwave-Assisted Sintering, Ceramics International, 49(18), 30452 (2023)
- Microstructure tailoring of solid oxide electrolysis cell air electrode to boost performance and long-term durability, Chemical Engineering Journal, 410, (2021).
- Highly active and durable double-doped bismuth oxide-based oxygen electrodes for reversible solid oxide cells at reduced temperatures, Journal of Materials Chemistry A, 7, 20558, (2019).
- Temperature-dependent long-term stability of Sr_{0.6}Na_{0.4}SiO_{2.8} fast ion conductors, Journal of Industrial and Engineering Chemistry, 71, 387 (2019).



Patents

- Development of high-performing and exceedingly robust four-layered thin film anode supported planar SOFC with large area by co-firing process”, registration No.: 11,616,239 (registration date: 23. 03. 28)

Personal link

- <https://www.kier.re.kr/board?menuId=MENU00840&siteId=null>

Call topic

- HORIZON-CL5-2026-10-D5-11



Eric Duffner

Project & working group leader

Federal Institute for Materials Research and Testing (BAM)

Biography

Eric Duffner graduated in mechanical engineering from the Berlin University of Applied Sciences in 2004 and started working at the Federal Institute for Materials Research and Testing (BAM) in Berlin in the same year.

Since then, he has been working in the field of hazardous goods transportation with a focus on pressure vessels for the high-pressure storage of gases. He has more than 20 years of experience in research, testing and approval of composite pressure vessels and their safe transportation.

He is a member of several national and international standardization groups on the subject of pressure vessels and has gained a lot of experience in regulatory work for the transport of dangerous goods and gas transport in the automotive sector.

Eric Duffner has been working for more than 15 years in the field of non-destructive testing, in particular in acoustic emission testing for mainly composite pressure vessels and is a certified acoustic emission level 3 tester and member of the DGZfP Technical Committee for Acoustic Emission Test Procedures.

He is currently working in Department 3.5 “Safety of Gas Storage Systems”, where he is leading several national research projects on composite pressure vessels as well as the working group “Service life monitoring of gas storage systems for compressed gases”.

Research Area

- Transportation, use in mobility and storage of gaseous and liquid hydrogen
- Risk and Safety Assessment and international standardization of hydrogen technology as well as pressure vessel and liquid hydrogen tanks
- AI-enhanced safety models to forecast risk under variable operating conditions
- Failure analysis, lifetime investigation and prediction regarding ordinary and extraordinary conditions for pressure vessel and liquid hydrogen tanks. Machine learning for lifetime prediction and reliability modelling
- Deep expertise in Small to large scale testing of high-pressure vessels and liquid hydrogen tanks under defined laboratory and application conditions (burst, load cycle, drop, impact, bullet, fire tests etc.)
- Thermal insulations of liquid hydrogen tanks
- Destructive and non-destructive testing methods and their improvement
- Digitalization, machine learning and AI for the application to high-pressure vessels and liquid hydrogen tanks
- Digital twins of technical hydrogen installations for digital tools of quality infrastructure
- Hydrogen filling station in operation as real-life laboratory

Personal link

- www.linkedin.com/in/eric-duffner-248a37137

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02
- HORIZON-CL5-2026-03-D3-22
- HORIZON-CL5-2026-05-D5-13



Gahyeong Kang

Senior Researcher

HD Hyundai Europe R&D Center GmbH

Biography

I earned a Master's degree in Marine Technology from NTNU (2015) and a Bachelor's in Naval Architecture and Ocean Engineering from Pusan National University (2013). My career has been dedicated to advancing safe integration of new energy systems in the maritime sector.

Since 2016, I have been working with HD Korea Shipbuilding & Offshore Engineering (HD KSOE,



formerly Hyundai Heavy Industries) in various research roles. I initially contributed as a Safety Engineer, addressing offshore mechanical completion and risk assurance. From 2017 to 2019, I focused on the safety challenges of alternative fuels. Between 2019 and early 2023, I served as a Researcher and later Senior Researcher at the Marine Energy Technology Laboratory, specializing in risk assessment for emerging marine energy systems.

Since April 2023, I have been based in Düsseldorf at HD Hyundai Europe R&D Center (HD ERC), representing the company in European R&D collaborations.

My expertise covers safety assessment of LNG, LPG, methanol, hydrogen, ammonia, and fuel cell systems, using methods such as HAZOP, FMEA, and QRA. I translate regulatory and safety requirements into practical system integration concepts.

I have participated in EU collaborative research, including the ReSail project on wind-assisted propulsion and the MarTrans center on maritime energy transition (Both are Norwegian Projects), strengthening my ability to bridge European and Korean partners.

Research Area

- Safety assessment and system integration of hydrogen and solid oxide fuel cell (SOFC) technologies for maritime applications
- Risk evaluation of alternative marine fuels including LNG, LPG, methanol, and ammonia
- Development of regulatory compliance strategies under IMO regulations
- Focus on scalability and durability of SOFC systems, with emphasis on monitoring, control, and lifetime extension
- Integration of rSOC technologies for grid-connected hydrogen production and port energy systems
- Contributions to European collaborative projects
- Bridging industry and academia by translating safety requirements into practical ship design solutions
- Strong network with classification societies and EU research partners, enhancing regulatory readiness
- Ongoing role in shaping joint EU–Korea projects that target Horizon Europe’s Cluster 5 priorities

Personal link

- <https://www.linkedin.com/in/gahyeong-kang-85730a173/>

Call topic

- HORIZON-CL5-2026-10-D5-11 (this topic will be transferred into the CHJU WP)
- TC3-01: Integration of control & monitoring tools and strategies for improved Fuel Cell System durability & reliability

- TC3-05: Multi-fuel SOFC powertrain for maritime transport
- TC4-02: Demonstration of rSOC operation for local grid-connected hydrogen production and utilisation



Ho Seok Park

Professor
Sungkyunkwan University

Biography

Ho Seok Park is the director of Research Center for 2D Elementary Redox Energy Storage (2DRES), a full professor of Chemical Engineering at the Sungkyunkwan University (SKKU), an adjunct professor at the Samsung Advanced Institute for Health Science & Technology (SAIHST), and SKKU Fellow. His current research interests focus on electrochemical energy storage and conversion devices based on 2D and carbon nanomaterials and polymer electrolytes. He has published more than 350 papers in the top journals, including Nature Materials, Joule, Chem. Soc. Rev., Energy & Environ. Sci., Nature Commun., Adv. Mater., JACS, Angew Chem, etc, and been taking associate and guest editor and editorial board member in the SCI(E) journals of Adv. Energy Mater., InfoMat, InfoScience, Adv. Funct. Mater., NEXT Energy, Energy Materials, Batteries & Supercaps, J. Phys. Energy, Materials Today Energy, and so on. He has been recognized by several awards including the Korean Academy of Science and Technology (KAST) Member, Commendation from Ministry of Science and ICT Minister, EnSM Young Scientist Award, S-OIL Young Scientist Award, National R&D Excellence 100 in 2019, the Scientist of the Month, the LG Yeonam Fellowship, and so on.

Research Area

Lithium ion battery, Sodium ion battery, Li-S battery, Aqueous battery

1. 2D energy storage materials. Nature Materials, 2019, 18, 156; Joule, 2019, 3, 1; Energy Environ. Sci., 2020, 13, 10491.
2. Bioinspired electrolytes and functional additives for aqueous batteries. Nat. Commun., 2025, 16, 6117; Energy Environ. Sci., 2024, 17, 7870; Adv. Mater., 2024, 2411686; Energy Environ. Sci., 2022, 15, 4572.
3. High entropy P-based alloys for LIB anodes. Energy Environ. Sci., 2024, 17, 5387; J. Am. Chem. Soc., 2024, 146, 21320.
4. Carbon architecturing for Li and Na metal batteries. Angew. Chem. Int. Ed., 2024, e202417930; Adv. Energy Mater., 2023, 2204353; Adv. Mater., 2019, 31, 1803444.



Personal link

- <https://www.esem.skku.edu/>
- <https://scholar.google.com/citations?user=LcUF72MAAAAJ&hl=en>

Call topic

- HORIZON-CL5-2026-03-D2-01
- ORIZON-CL5-2026-05-D2-03
- HORIZON-CL5-2027-03-D2-06
- HORIZON-CL5-2027-06-Two-Stage-D2-07
- HORIZON-CL5-2027-07-D2-08



Hwamyung Jang

Researcher
Uppsala University

Biography

1. Summary of academic background and professional experience

Ph.D in microstructural control of active materials for Li ion batteries from University of Tokyo, and have been working for Battery industry over 13 years from Battery materials such as LFP cathode, carbon conductive additives (Dongjin Semichem), Li ion battery manufacturing processes (Northolt AB) to next generation technology such as Solid state battery (Bosch Japan), Lithium metal battery (Northvolt AB)

2. Core research experience representation achievement

I have been working in next generation material development such as Lithium metal anode, High Nickel NMC, and new electrolyte system for Lithium metal battery, Anode free concept, Hybrid battery, and developed 100 Ah Lithium metal cell prototypes for automotive applications, created corporate IP strategy and conducted FTO (freedom to operate) for the first products, and lead technical due diligence for a Silicon Valley based start-up acquisition.

3. Participation experience in EU collaboration research projects

I have been involved multiple EU projects, such as Horizon Europe SeNSE project as a part of high Nickel NMC cathode development and also a board member of SeNSE project and I also worked for IPCEI project to develop Lithium metal battery.

Research Area

1. Main research field

- Optimization of Cell design
- Solid state battery development
- Anode free development
- Hybrid concept development
- Lithium metal anode development
- Dry electrode manufacturing process development
- Advanced formation & aging technology development
- Direct recycling technology development

2. Technical Uniqueness, Specialization, or flagship results

- Developing next generation li ion battery platform which can increase 30 % energy density and reduce 30 % of cell cost by removing 50% of cell manufacturing process steps
- Currently working as a researcher in Uppsala university for Solid state and Anode free project, and planning to open a battery start-up company in Oct. 2025

3. Patents, publication, or products that reflect research excellence

[Selected Patents]

- a. Method for dispersing of carbon compound using supercritical fluid, Application Number: CN106102889A, CN106102889B, KR20150101426A, WO2015130100A1
- b. Ion conductor nanoparticle agglomerate and composite material containing ion conductor nanoparticle, Application Number: JP2016136863A, DE102017209689A1
- c. Contain aggregates of ionic conductor nanoparticles and composites, the ion conductor nanoparticles, Application Number: DE102017209689A1
- d. Ion conductive membrane with anomaly detection function, Application Number: JP2019200901A
- e. All-solid battery containing impurity scavenger, Application Number: JP2019200900A
- f. Lithium transition metal composite oxide and method of production, Application Number: EP3636597A1, WO2020074676A1
- g. Single-layer anode, Application Number: SE2250156A1
- h. Multi-layered electrode, Application Number: WO2023156528A1

[Selected papers]

- a. The Battery Component Readiness Level (BC-RL) framework: A technology-specific development framework, M. Greenwood, J. M. Wrong, R. Schmuck, H. Jang, M. Winter, J. Leker, J. Power Sources Advances, Vol. 14 (2022)
- b. The role of Cu ions of the self-reassembled MnO₂ nanosheets for rechargeable aqueous batteries, H. Jang, S. Suzuki, and M. Miyayama, J. Eur. Ceram. Soc., 34 (16) 4297-4304 (2014)
- c. Self-reassembled MnO₂ nanosheets for electrochemical capacitors in neutral aqueous solution, H. Jang, S. Suzuki, and M. Miyayama, J. Electrochem. Soc., 159 (9) A1425-A1430 (2012)



- d. Synthesis of open tunnel-structured TiO₂(B) by nanosheets processes and its electrode properties for Li-ion secondary batteries, H. Jang, S. Suzuki, and M. Miyayama, J. Power Sources, 203, 97-102 (2012).

Personal link

- www.linkedin.com/in/hwamyung-jang

Call topic

- HORIZON-CL5-2027-02-D2-06: Sustainable and Competitive Cell Production Techniques for Lithium-ion And Sodium-ion Batteries (BATT4EU Partnership)



Jaebeom Lee

Professor

Chungnam National Univeristy

Biography

Education

- PhD, The Robert Gordon University, Aberdeen, United Kingdom (1999-2003)
- Thesis topic at “Laser induced TiO₂-SiO₂ coating” (Adviser: Professor P. Robertson)
- BS, Department of Chemistry, Chungnam National University, Daejeon, South Korea (1991-1998)

Affiliation

- 09/2018 - Present Professor, Department of Chemistry, Chungnam National Univ.
- 03/2007 – 08/2018 Professor, Department of Opto-Mechatronics Engineering, Pusan National University
- 09/2003 – 02/2007 Post-Doc, Department of Chemical Engineering, University of Michigan, Ann Arbor, MI. USA (Adviser: Prof. N.A. Kotov)

Awards

- Top 1% Research Faculty Award, CNU, 2023
- KCS Yongin Science Inc. Analytical Chemistry Research Award, 2023
- Research Excellence Award, NRF, Ministry of Science, ICT and Planning, South Korea, 2017
- 40 Inventions of the Year, Nano Korea, 2014
- Premier Research Faculty Award, PNU, 2011
- Best Research Faculty Award, College of Nanosci. and Nanoeng., PNU, 2009, 2011

Editorial Board Member

- Surface Science and Technology

Research Publication list

- <https://scholar.google.com/citations?user=vTHzFWAAAAAJ>

International research projects with Austria, Belarus, England, Poland and recently Germany have been done and doing in the field of development of energy catalysts

Research Area

- Main research field (energy catalyst and harvesting, CO₂ transition, solid state battery and supercap, single domain catalyst, quantum mechanical mechanism study)
- Technical uniqueness (magnetic field/chirality-induced catalyst, nanoparticle mass production/commercialization)(8 tech transfer and commercialization) (over 280 papers related with nanoparticle catalyst for energy)
- A review paper in Nano-Micro Letters for All Solid State Batteries is selected to be a prominent paper

Personal link

- <https://www.facebook.com/groups/nanoleelab>
- <https://www.researchgate.net/profile/Jaebeom-Lee-3>
- https://scholar.google.com/citations?hl=ko&user=vTHzFWAAAAAJ&view_op=list_works&sortby=pubdate

Call topic



Jens Moschner

Research Manager
KU Leuven / EnergyVille

Biography

I studied Physics with a focus on solar energy at the University of Hannover, Germany, and have since obtained 30 years of expertise in Photovoltaics, from fundamental physics to industrial implementation and reliability, both in research institutions and industry. I collaborated in different international multi-



partner environments for the last 20 years and coordinated several projects and teams. In the past, I lead a team on advanced rear-side structures for industry-leading PERC solar cells and later worked on advanced interconnection methods for high-performance back-contact solar cells. Starting with processing technology for solar cells, I expanded my work to module integration and interconnection, power electronics and, recently, integration of PV into the built environment. I am passionate about Renewables in a general sense - new technologies, hardware, implementation, and policies. Previous FP7/Horizon 2020 projects include Nano-PV on nanotechnology and HyPERFarm on farm decarbonization. Currently, I am participating in four Horizon Europe projects for KU Leuven, including SYMBIOSYST on agricultural PV, oPEN Lab on living labs for positive energy neighborhoods, Nautical Sunrise on offshore floating PV, and INCREASE on Building-Integrated PV. Further to that, I am managing national and regional projects. I am regularly representing KU Leuven and EnergyVille at conferences and workshops.

Research Area

The current focus of my work lies in the effective integration of solar energy generation into buildings, both physically and electrically. The electrical system design, effective energy management and grid integration, as well as DC micro- and nanogrids, are fields of interest. Further to that, I am addressing component and system reliability, failure mode analysis, accurate metrology and meteorology. I am currently leading a Flagship project of the EnergyVille research center on “Modular Integration of Renewable Energy into Buildings”, bringing together research and development in electricity generation, building design, modeling, storage and energy management. I hold nine patents. For publications, see <https://orcid.org/0000-0002-1663-0352>.

Personal link

- <https://www.linkedin.com/in/jens-moschner/>

Call topic

- HORIZON-CL5-2026-11-D3-15: Improved system design for innovative PV applications (EUPI-PV Partnership)
- HORIZON-CL5-2027-07-D3-18: PV based electrification of the economy: Designing & optimising PV systems supporting industrial electrification and promoting participation in electricity markets (EUPI-PV Partnership)
- HORIZON-CL5-2026-03-D3-19: Grid-forming capabilities for more resilient and RES-based electricity grids
- HORIZON-CL5-2026-03-D3-22: Novel solutions for off-grid storage of renewable energy for critical infrastructures
- HORIZON-CL5-2026-09-D4-02: Low disturbance prefabrication approaches for deep renovation of multi-story buildings (Built4People Partnership)



Jimun Yoo

Teamleader
Forschungszentrum Jülich

Biography

Dr. Jimun Yoo leads the Catalytic Interface Research team at the Institute for Sustainable Hydrogen Economy (INW) at Forschungszentrum Jülich, Germany.

His research focuses on developing advanced catalytic systems to utilize hydrogen as a sustainable energy carrier, addressing global climate change challenges. His work emphasizes the electrocatalytic interface between electrified catalyst surfaces and liquid electrolytes, aiming to optimize charge transfer processes for efficient hydrogen production, storage, and utilization. Recognizing the potential of nanomaterials in enhancing electrocatalytic hydrogen technologies, Dr. Yoo concentrates on (1) Elucidating the relationship between material structure and catalytic performance to guide material design and (2) Investigating the catalytic role of electrolyte components at electrified interfaces using in situ and operando analytical methodologies.

Dr. Yoo earned his Ph.D. in Chemical Engineering from Seoul National University in August 2020, under the supervision of Prof. Yung-Eun Sung, where he studied nanostructure-activity correlations in fuel cell catalysts. In March 2021, he joined ETH Zurich as a Schmidt Science Fellow in Prof. Maria Lukatskaya's group, expanding his expertise in developing in situ and operando analytical tools to understand selective electrocatalytic CO₂-to-CO conversion in various electrolyte environments. Following his postdoctoral research, he has assumed his current role at Forschungszentrum Jülich from August 2024.

Dr. Yoo has authored multiple articles in international peer-reviewed journals, including Journal of the American Chemical Society, Advanced Materials, Nano Letters, and ACS Nano. His work has been cited over 3,000 times, reflecting his significant impact in the field.

Research Area

- Main research fields: operando analyses of electrified solid-liquid interface; electrocatalyst materials; chemical hydrogen storage;
- Technical specialty: lab-source operando analyses (e.g., operando electrochemical mass spectrometry, operando X-ray scattering, operando X-ray spectroscopy, operando vibrational spectroscopy), DESY/ESRF synchrotron-based operando analyses
- Selected publication: J. Am. Chem. Soc. 145, 46, 31768-31777 (2024); JACS Au 2, 10, 2222-2234



(2022); ACS Nano 16, 10, 16529-16538 (2022); Acc. Chem. Res. 55, 9, 1278-1289 (2022); Nano Lett. 22, 9, 3636-3644 (2022); Adv. Mater. 34, 8, 2107868 (2022)

- Schmidt Science Fellowship (2020-2022)

Personal link

- www.linkedin.com/in/ji-mun-yoo-aa9958210

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02; Dedicated multi-modal operando analyses platform on solid-liquid or solid-gas interface to enable fundamental mechanism understanding for innovative catalyst structure development.



June-Seok Choi

Research Fellow/Representative Professor
Korea Institute of Civil Engineering & Building Technology (KICT)

Biography

June-Seok Choi obtained his Bachelor of Engineering in 1993, Master of Engineering in 1996, and Doctor of Engineering in 2015, all from Korea University. He joined the Korea Institute of Civil Engineering and Building Technology (KICT) in 1996, where he serves as a Research Fellow in the Environmental Research Division and as a representative professor at KICT School, overseeing student education. Dr. Choi has participated in numerous international collaborative projects with Spain, Australia, and Middle Eastern countries, and is currently engaged in large-scale national R&D programs in Korea.

From 2021 to 2023, he conducted research at EURECAT in Spain under the Tecniospring Industry program, supported by the EU HORIZON 2020 and the Marie Skłodowska-Curie Fellowship(MSCA). During this period, he collaborated with various European institutions on advanced water treatment and resource recovery technologies. He is also actively preparing a proposal for the upcoming Horizon Europe 2025 call, aiming to strengthen international research cooperation.

Dr. Choi's expertise spans advanced treatment processes, membrane-based technologies, and seawater desalination, where he has made notable contributions to both academia and industry. He currently serves on the Editorial Board of the international journal Desalination and holds leadership positions in several professional societies in Korea, including Vice President of the Korean Society on

Water Environment, Vice President and Editor-in-Chief of the Korea Appropriate Technology Society, and Director of both the Korean Society of Environmental Engineers and the Korean Society of Water and Wastewater.

Research Area

Research Areas: Seawater desalination, resource recovery, membrane-based water treatment technology development, renewable energy and waste heat recycling technology, water–energy nexus technology development

Publications: Over 50 SCI(E) papers

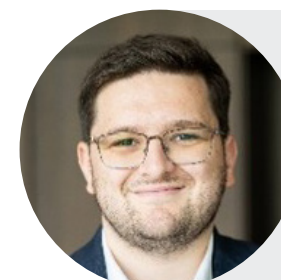
Patents: More than 25 patents

Personal link

- <https://www.linkedin.com/in/june-seok-choi-04523614/>

Call topic

- HORIZON-CL5-2027-07-D3-29: Community of practice - Data-Driven Decision-Making in Energy, Carbon Capture, Utilisation and Storage (CCUS)
- HORIZON-CL5-2027-07-D3-33: Delivery of industrial CCUS clusters – Societal Readiness pilot



Kevinjeorjios Pellumbi

Senior Scientist
Fraunhofer UMSICHT

Biography

With a strong academic background in electrochemistry and catalysis, I specialize in developing and optimizing electrochemical systems for sustainable chemical production. My research focuses on bridging the gap between lab-scale innovation and industrial application, with expertise in water electrolysis, CO₂ electroreduction, electrochemical hydrogenation, and catalyst design for renewable feedstock conversion. I have extensive experience designing advanced reactor setups up to the kW scale in containerised systems. My work has contributed to publications in leading journals and collaborations with industry partners. Currently my research focuses on the coupling of CO₂ capture solutions with electrolysis in scalable electrolytic cells under industrial conditions. I have experience in



multi-partner collaborations involving academia, SMEs, and industry, bridging technology development and scale-up.

I hold a PhD in Chemistry at Ruhr University Bochum on CO₂ electrolysis and electrochemical hydrogenations, working currently as a Senior Scientist at Fraunhofer UMSICHT at the department of electrosynthesis working on the coordination of our publication and IP-strategy.

Research Area

- Electrolysis (water electrolysis, CO₂ and capture media electrolysis, electro-organic synthesis)
- Able to scale systems to the container level (Flagship Leuna100, P2X Platform, Air2Chem)
- Multiple publications in the field that reflect excellence in peer-reviewed journals such as Energy & Environmental Science, Chemical Engineering Journal, Cell Press Reports Physical Science

Personal link

- <https://www.electrosyn.ruhr-uni-bochum.de/esyn/>
- <https://www.umsicht.fraunhofer.de/de/ueber-fraunhofer-umsicht/abteilungen/elektrosynthese.html>

Call topic

- HORIZON-CL5-2027-03-D3-31



Lawrence Limjuco

Research Fellow

Energy and Bioproducts Research Institute, Aston University

Biography

The concept and design of ELiXIR-B for MSCA PF are rooted in the researcher's interdisciplinary expertise in materials science, membrane technology, and electrochemical systems. His interest in Li recovery began during his integrated MSc/PhD in Energy Science & Technology at Myongji University, South Korea, where he developed polymeric composite membranes incorporating Li-selective ionophores and metal oxides for Li extraction from SW. This work led to three publications in high-impact journals: Chemical Engineering Journal (1), ACS Applied Materials & Interfaces (1), and Colloids & Surfaces A (1); alongside five Korean patents and one U.S. patent, underscoring both scientific originality and translational potential. As a Research Assistant Professor at Myongji University, he led a National Research Foundation (NRF)-funded project on IV PS-based porous materials for heavy

metal remediation, which resulted in two publications: Chemical Engineering Journal (1) & ACS Applied Polymer Materials (1). His portfolio also includes membrane desalination, particularly forward osmosis using smart draw solutions, published in Desalination (1). In 2021, he returned to the Philippines as a Department of Science & Technology (DOST) Returning Scientist Awardee and established the Advanced Batteries Center at the University of the Philippines – Diliman. There, he led research on Ni- and Fe-rich cathode materials for sodium-ion batteries, producing three publications in Molecules (1), Batteries & Supercaps (1), & Materials Today Energy (1). To date, the researcher has authored 20 peer-reviewed publications, holds an h-index of 11, & has received over 910 citations (Google Scholar, August 2025). His international engagement spans ASEAN, South Korea, and China, reflected in awards such as the ASEAN-Republic of Korea Award for Excellence in Science, Technology, and Innovation (2020) and the ASEAN Academy of Engineering and Technology (AAET) Green Award (2021). These experiences demonstrate not only scientific excellence but also strong leadership, project coordination, & stakeholder engagement, positioning him to successfully deliver ELiXIR-B and grow as a European leader in sustainable CRM recovery from secondary sources.

Research Area

Selective recovery of critical raw materials from secondary sources, water desalination, sodium-ion battery, valorization

Patents:

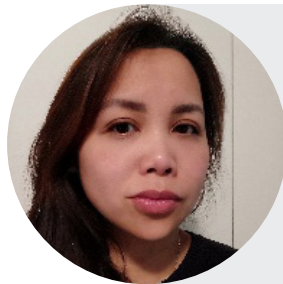
- Korean Patent Registration Number: 10-1680196-0000.
- Korean Patent Registration Number: 10-1753905-0000.
- Korean Patent Registration Number: 10-1987667-0000.
- Korean Patent Registration Number: 10-2018434-0000.
- Korean Patent Registration Number: 10-2074869-0000.
- USA Patent Registration Number: US 9,850,226.

Personal link

- <https://scholar.google.co.uk/citations?user=AreJLhgAAAAJ&hl=en&oi=ao>
- <https://www.linkedin.com/in/lawrence-limjuco-880818/>

Call topic

- HORIZON-CL5-2026-03-D3-01



Le Anh Nguyen Long

Assistant Professor
Twente University

Biography

I am an Assistant Professor of Public Administration at the University of Twente. My research advances the social and governance dimensions of energy transitions. My work focuses on energy citizenship, urban climate governance, and policy networks, providing critical insights into how communities, municipalities, and stakeholders engage with transformative energy systems. I have published widely on the governance of climate resilience in cities, the role of cultural and social capital in energy transitions, and the societal acceptance of emerging technologies.

Within the scope of Horizon Europe Destination 3 (Renewable Energy, Energy Systems, Grids & Storage, and CCUS), my expertise directly supports the integration of technological innovation with societal readiness. I investigate how trust, equity, and legitimacy shape public acceptance of AI-enabled energy systems, grid-forming technologies, and large-scale storage solutions. My research also develops frameworks for socio-technical resilience, blending engineering stability with governance capacity and stakeholder alignment. By combining comparative case studies, participatory approaches, and network analysis, I aim to contribute to inclusive, just, and effective pathways for renewable integration, resilient grids, and industrial decarbonization.

Research Area

My interests include: (1) Societal acceptance and governance of energy storage and grid integration; (2) Energy citizenship and community engagement in decentralized renewable systems; (3) Socio-technical resilience frameworks for renewable-based grids; (4) Governance of climate-neutral and positive energy districts

Personal link

- <https://www.linkedin.com/in/le-anh-nguyen-long-7b0946207/>
- <https://orcid.org/0000-0002-6188-9646>

Call topic

- HORIZON-CL5-2026-D3-21
- HORIZON-CL5-2026-D3-19



Lina Murauskaite

Senior Researcher
Lithuanian Energy Institute

Biography

I am a senior researcher at the Lithuanian Energy Institute. I represent our team of the Laboratory of Energy Systems Research: <https://www.lei.lt/en/subdivision/laboratory-of-energy-systems-research>. Founded in 1948, this laboratory brings over 70 years of experience in addressing both scientific and practical challenges related to energy systems. Our team consists of researchers with different backgrounds: electrical engineering, thermo engineering, and energy economics. This diverse mix of quantitative modeling, policy and market analyses, field-tested strategies, and deep strategic insight positions the lab as a pivotal actor in national and EU-level energy innovation. Our team is preparing the Lithuanian Energy Strategy since 1992. We have many partners in Lithuania: from policy makers, TSO, DSO, energy companies, municipalities, to local communities. We can be a use case from the Baltic countries to hydrogen technology (Vilnius city: coupling electricity, heating, and transport), exponential growth of solar PV and wind (both onshore and offshore). Moreover, we collaborate with such partners as EPSO-G (owner of TSO) and can include in the project Energy Cells: battery park of 200 MW.

Research Area

- Advanced energy modelling & optimization.
- Macroeconomic scenario analysis, energy demand forecasting.
- Environmental impact & policy analysis
- Energy market & regulatory studies
- Positive energy districts
- Energy poverty

Personal link

- <https://orcid.org/0000-0003-0234-4133>

Call topic

- HORIZON-CL5-2026-02-D4-04: Innovative approaches for the deployment of Positive Energy Districts



Manolya Kavakli-Thorne

Program Lead and Professor of Gamification & Simulation Technology
The Sir Peter Rigby Digital Futures Institute, Aston University

Biography

Kavakli has 35 years of experience in pioneering Mixed Reality Simulations. She is a Research Professor and Program Lead for Gamification at The Sir Peter Rigby Digital Futures Institute and a Professor at College of Physical Science and Engineering, Aston University, Birmingham, UK. She conducts highly interdisciplinary applied research in Mixed Reality, Human-Computer-Interaction and Man-Machine Systems. She received 52 competitive grants and published 240 papers with 3526 citations (h-index 26 and i10 64), generating a total research income of over £10million. She established the first Virtual Reality Lab in Sydney in 2005, the first Simulation Hub in 2015, receiving grants from EU Horizon, NSF China, The ACT Government, Commonwealth, Australian Research Council and State Planning Organisation of Turkey. She supervised 11 postdocs and 117 postgraduate students (17 PhD, 4 MSc, 7 Honours, 34 MIT projects, 48 MIT Special Topics, 10 MEng and 60 MIT/MEng internships). She is currently supervising 3 Postdocs and 7 PhD students.

Research Area

- Digital twins of Buildings and Transport Systems
- Mixed Reality Simulations and What if Scenarios
- Data Analytics
- Gamification
- Smart Cities and Buildings

Personal link

- <https://research.aston.ac.uk/en/persons/manolya-sydney-australia>

Call topic

- HORIZON-CL5-2026-02-D4-03: Innovative pathways for low carbon and climate resilient building stock and built environment (Built4People Partnership)
- HORIZON-CL5-2026-02-D4-02: Smarter buildings as part of the energy system for increased efficiency and flexibility – Societal Readiness Pilot



Mohan Lal Kolhe

Professor in Renewable Energy
University of Agder (Norway)

Biography

Prof. Dr. Mohan Lal Kolhe holds a full professorship in Smart and Sustainable Electrical Energy Systems with Renewables and Hydrogen at the University of Agder, Norway. With over three decades of international academic leadership, he has made significant contributions as a renewable energy technologist at institutions including University College London, University of Dundee, the Hydrogen Research Institute in Canada, etc.

Prof. Kolhe's influence extends to policy, as evidenced by his key role on South Australia's first Renewable Energy Board (2009–2011), where he helped shape pioneering energy policies. His academic expertise is recognized through senior leadership offers, including Vice-Chancellor of Homi Bhabha State University and professorial chairs at Teesside University and NTNU.

As an educator, Prof. Kolhe has delivered advanced courses on topics ranging from hydrogen technologies to energy economics. He has mentored numerous PhD scholars, many of whom have engaged in industry-sponsored research, translating academic findings into practical solutions. He has also successfully secured competitive research funding from prestigious bodies like the European Union and the Norwegian Research Council.

His research excellence is demonstrated by an h-index of 36 and an i10-index of 128. As an expert assessor for international research councils and an active member of academic committees, Prof. Kolhe plays a key role in shaping research and academic quality. He frequently serves as a conference chair and editor for prestigious energy journals and book series.

Ranked among the top 2% of scientists worldwide by Stanford University since 2020, Prof. Kolhe remains an influential figure in global clean energy transitions, serving as a respected researcher, policy advisor, and academic leader.

Research Area

1. Solar Photovoltaic (PV) Systems Engineering and Integration.
2. Integrated Renewable Energy (Solar, Wind, Hydrogen Energy Technologies) Systems and Smart Grid Technologies.
3. Green Hydrogen Production and Applications



4. Electric vehicle (EV) integration into the power grid, encompassing charging infrastructure.
5. Microgrid and Off-Grid System Design.
6. Energy Economics and Policy.
7. AI and Machine Learning in Energy Systems
8. Sustainable Energy System Modeling and Optimization.
9. Grid Integration of Wind Energy System

Personal link

- <https://orcid.org/0000-0001-7547-9413>
- <https://www.uia.no/english/about-uia/employees/mohanlk/index.html>

Call topic

- HORIZON-CL5-2026-D3-01: Integrated smart energy systems for a rapid clean energy transition



Moon Son

Senior Researcher / Associate Professor
Korea Institute of Science and Technology

Biography

As an environmental engineer, I conduct research on electrochemical water-energy-resource recovery and process optimization using artificial intelligence. I received my Ph.D. from the Gwangju Institute of Science and Technology (GIST) in 2017 and subsequently completed ~three years of postdoc experience at Penn State (Supervisor: Prof. Bruce E. Logan). I currently work as a Senior Researcher at Korea Institute of Science and Technology (KIST) and an Associate Professor at University of Science and Technology, Korea (UST).

Published ~80 papers in environmental engineering journals (including Energy & Environ. Sci.; Environ. Sci. Technol.; Water Res.; etc.) and holds >10 patents. Recently, I have also served as the principal investigator for an international collaboration project that facilitates research collaboration between Korea (KIST) and the U.S. (Johns Hopkins and SUNY Albany).

The consortium I'm part of was recently selected for the Horizon Europe program (serving as the Korean principal investigator; partner role), which is currently in the funding process. In this project, I'm working on utilizing artificial intelligence to optimize systems and track the behavior of specific materials.

Research Area

- Battery recycling, Artificial intelligence for energy and environmental engineering, Water-Energy-Resource nexus, Electrochemical cells

Personal link

- <https://sites.google.com/view/moonson>

Call topic

- HORIZON-CL5-2026-03-D2-02: Development of direct recycling processes (BATT4EU Partnership)



Natalia Garcia-Colin

Research and Innovation Lead
Machine Learning Group, Université Libre de Bruxelles

Biography

The Machine Learning Group (MLG) at the Université Libre de Bruxelles develops AI-enabling technologies with applications in energy grids, energy communities, and virtual power plants. The team consists of two principal investigators, three postdoctoral researchers, two PhD students, and a research and innovation lead.

Research Areas

MLG's expertise spans forecasting and time series prediction, scalable analytics and big data mining, data-driven modeling and system identification, causal inference and computational statistics, statistical software and simulation, data augmentation, optimization, multi-agent systems, collective intelligence, evolutionary game theory, large-scale predictive systems, and bioinformatics.

Key Members

Tom Lenaerts is full professor at ULB and affiliated with the AI Lab at the Vrije Universiteit Brussel and the Center for Human-Compatible AI at UC Berkeley. Since 2025 he has served as Academic Director of FARI, the Brussels institute for AI for the Common Good. He is a founding member of the Brussels Interuniversity Institute of Bioinformatics ((IB)²) and the Trusted AI Labs (TRAIL). Previously president of the Benelux Association for Artificial Intelligence, he is now an expert for the Global Partnership on AI and member of the European Laboratory for Learning and Intelligent Systems (ELLIS). He



contributed to the Horizon 2020 project Foundations of Trustworthy AI.

Gianluca Bontempi is full professor at ULB, former president of the TRAIL initiative, and co-leader of CLAIRE's COVID-19 task force. A Senior IEEE member and associate editor of the International Journal of Forecasting, he has held research positions in Belgium, the Netherlands, Switzerland, and Italy, with expertise in AI, robotics, and performance modeling. He is currently a PI of the Interreg EU-cofunded project MultiRoofs: Multifunctional Roofscapes for Smart, Green, and Just Urban Densification.

Natalia Garcia Colin, Research and Innovation Lead, holds a PhD in mathematics and has held research and industry roles in Mexico, Germany, the UK, and Belgium. She coordinates MLG's participation in the Horizon Europe 2025 project Integrated Approaches for Remanufacturing.

Research Area

Professor Gianluca Bontempi is a leading researcher in machine learning and artificial intelligence. He has published more than 250 scientific papers in top journals and conferences and holds two patents. His work has been cited over 24,700 times, with an h-index of 67. He has also secured 32 research grants totaling more than €7 million from prestigious funding bodies such as the Brussels-Capital Region, the European Union, and the Walloon Region. His expertise covers scalable analytics, big data mining, forecasting, time series prediction, causal inference, and computational statistics. He is also active in statistical software development, modeling, simulation, and data augmentation. Beyond these, he has made specialized contributions in digital twin technologies, wind power forecasting, electricity load prediction from meteorological and sensor data, and conductor temperature estimation in transmission lines.

Professor Tom Lenaerts has built a strong interdisciplinary profile at the intersection of AI and machine learning. He has published over 170 peer-reviewed articles, with more than 7,100 citations and an h-index of 40. His research has earned several awards for advancing AI applications in social behavior, decision-making under uncertainty, and coordination in multi-agent systems. His expertise includes optimization, multi-agent systems, collective intelligence, and evolutionary game theory. He has also contributed significantly to computational biology and bioinformatics, applying machine learning to analyze complex biological systems. Lenaerts frequently investigates the dynamics of decision-making in both human and artificial agents, aiming to promote cooperation, fairness, and resilience in complex environments.

Personal link

- LinkedIn: nataliagarciacolin

Call topic

- HORIZON-CL5-2026-03-D3-21
- HORIZON-CL5-2026-03-D3-23
- HORIZON-CL5-2026-11-D3-24
- HORIZON-CL5-2027-02-D3-25
- HORIZON-CL5-2027-07-D3-26
- HORIZON-CL5-2027-07-D3-27
- HORIZON-CL5-2027-07-D3-29



Paula Ferreira

Professor/Director

ALGORITMI Research Centre, University of Minho

Biography

Associate Professor at the Department of Production and Systems, School of Engineering, University of Minho, Portugal.

Director of the ALGORITMI Research Centre - Largest Research Centre of the School of Engineering bringing together more than 120 integrated researcher working on industrial engineering, informatics, information and systems and industrial electronics.

Personal research interests primarily lie in energy planning, energy modelling, clean energy and mobility.

Deputy Editor-in-Chief of the ENERGY Journal (Elsevier) in January 2024, and she has also been serving as a subject editor for Economy and Environment since 2017. Member of the Editorial Board of several other international journals, including The International Journal of Sustainable Energy Planning, AIMS Energy, AIMS Environmental Science, Smart Energy (Elsevier), Electricity (MDPI) and Journal of Industrial and Production Engineering.

Co-founder of ICEE - International Conference on Energy & Environment, chairing the 2015, 2019, and 2024 editions hold at the University of Minho.

Extensive experience as project evaluator for Horizon Europe, National and International Research Institutions (Portugal, Austria, Belgium, Netherlands, Latvia...)



Participation in projects such as
ESGRIDS-Enhancing Smart GRIDs for Sustainability;
Alliance for the Energy Transition;
Intelligent and Climate Neutral Cities;

all developed in close collaboration with the ALGORITMI Research Groups;

Coordinator of the FP7 project “International Network on Energy Planning (Portugal, Spain, Brazil, UK).

Research Area

ALGORITMI Research Center focuses its activity on projects that explore a strong link with the community, namely, the industry and the public administration. We have a strong connection with large industry in the energy/transportation sector (e.g. joint projects with Bosch and Continental) but also with national and local companies.

The competences of the research centre may be found in:

- <https://algoritmi.uminho.pt>

A few of the emblematic projects may be found in:

- <https://algoritmi.uminho.pt/projects-publications/completed-projects/>
- <https://algoritmi.uminho.pt/projects-publications/ongoing-projects/>

We can highlight our competences on power electronics, renewable energy integration in the grid, data science, artificial intelligence, modelling (optimization, simulation...), impact assessment, industrial engineering, which we have been applying in different sectors, particular energy and transportation.

Personal link

- <https://orcid.org/0000-0002-3712-4803>
- <https://www.linkedin.com/in/paula-varandas-ferreira/>
- <https://www.scopus.com/authid/detail.uri?authorId=55883358000>

Call topic

- HORIZON-CL5-2027-07-D3-17
- HORIZON-CL5-2026-03-D3-19
- HORIZON-CL5-2026-03-D3-23
- HORIZON-CL5-2026-11-D3-24
- HORIZON-CL5-2027-07-D3-29



Rolf Hempelmann

Head / President

MINT-Campus Alte Schmelz e.V.

Biography

Chemistry study and PhD at the university of Münster;

12 years as post doc scientist at the research center of Jülich;

during that time external habilitation at RWTH; the topic was neutron scattering on hydrogen in metals. Furthermore during that time: 1 year guest researcher in Los Alamos National Laboratory in the US.

1993 - 2016: full professor of Physical Chemistry at Saarland University;

research activities nano chemistry, colloidal chemistry, energy-relevant electrochemistry: PEM fuel cells, Vanadium redox flow batteries, galvanofarming;

2016 retirement. And then: build-up and operation of youngsters' research and technology center (Schülerforschungs- und -technikzentrum, SFTZ), a NGO

independent of university;

During university time: Coordinator of Small scale collaborative EU project ERUDES DP (Development of Electrochemical Reactors Using Dehydrogenases for Enantiopure Synthon Preparations, FP7-NMP-2007-SMALL 1)

and of EU Interreg project RFB-Solar (Redox-Fluss-Batterien als Solarenergie-Zwischenspeicher für Elektromobilität) ; at present participation in EU Interreg Grand region CERTEB_OPT (Compreons les CERTificats Energétiques des

Bâtiments scolaires et résidentiels en Grande Région et OPTimisons la gestion énergétique ensemble avec nos adolescents).

Short term docent at Hanyang University.

Further activities: vice president of the (Germany-wide) German Korean Society and chairman of the Saarland branch of the German Korean Society



Research Area

We take care of the dissemination of high-tec research results via our youngsters research center into the scholls and thus into the society. In this way we are active against the lack of scilled personal, a main obstacle of the industrial development nowadays.

Personal link

www.mintcampus.de/SFTZ
@mint.campus.igb (Instagram)

Call topic

- HORIZON-CL5-2027-07-D3-17
- HORIZON-CL5-2026-03-D3-19
- HORIZON-CL5-2026-03-D3-23
- HORIZON-CL5-2026-11-D3-24
- HORIZON-CL5-2027-07-D3-29



Soo Young Kim

Professor
Korea University

Biography

Summary of academic background and professional experience

Soo Young Kim is a professor in the department of Materials Science and Engineering in Korea University. He received the B.S., M.S., and Ph. D. degrees in materials science and engineering from Pohang University of Science and Technology (POSTECH), Pohang, South Korea, in 2001, 2003, and 2007, respectively. During his post-doctoral period in Georgia Institute of Technology, USA, he focused on converting graphene oxide to graphene using thermo-chemical nanolithography technique. After starting assistant professor in 2009, he has been interested in the modulation of the properties of two-dimensional materials such as graphene, graphene oxide, transition metal dichalcogenides, and their applications. He combined his experience about optoelectronic devices with two-dimensional materials so that his research is focused on the optimization of two-dimensional materials' properties and their application to energy devices. During the sabbatical year as a visiting professor at University of Chicago in 2015, he learned the synthesis of nano particles based on metal sulfides, organic perovskite materials, and inorganic perovskite materials. Nowadays, his laboratory is composed of two groups. One

group is focusing on organic based semiconductors such as organic light emitting diodes, perovskite light emitting diodes, perovskite solar cells, and perovskite memories. The other group is focusing on the synthesis of two-dimensional materials and its application to hydrogen evolution reaction and CO2 reduction. He has produced more than 400 publications and H-index is 81 (google scholar).

Core research expertise and representation achievements

1. Recent advances in electrochemical, photochemical, and photoelectrochemical reduction of CO2 to C2+ products, Small, 19(16), 2205765 (2023).
2. Transition metal ions doping on ZIF-8 for enhancing the electrochemical CO2 reduction reaction, Advanced Materials, 2208224 (2022).
3. Multifunctional nano-heterogeneous Ni(OH)2/NiFe catalysts on silicon photoanode toward efficient water and urea oxidation, Applied Catalysis B: Environmental, 317, 121765 (2022).
4. Low-crystalline AuCuIn catalyst for gaseous CO2 electrolyzer, Advanced Science, 9, 2104908 (2022).
5. 2-Dimensional metal organic frameworks and covalent organic frameworks for electrocatalysis: Distinct merits by the reduced dimension, Advanced Energy Materials, 12, 2003990 (2022).

Participation experience in EU collaborative research projects: Euro star project

Research Area

Main research fields: Synthesis of new kinds of catalysts for CO2 reduction

Technological uniqueness: Single atom catalysts. I am also working on next-generation light-emitting devices, solar cells, hydrogen production, CO2 reduction, and electrochromic cells using organic semiconductors, perovskites, and two-dimensional materials

Any patents, publication, or products that reflect research excellence

1. "Leveraging the inter-metal distance in dual-atom catalysts: Revealing optimized synergistic interactions for CO2 electroreduction", ACS Nano, vol. 19, p.18698-18707 (2025)
2. "Elucidating the role of alkali metal carbonates in impact on oxygen vacancies for efficient and stable perovskite solar cells", Advanced Science, vol. 11, p.2406657 (2024)
3. "Transition metal ions doping on ZIF-8 for enhancing the electrochemical CO2 reduction reaction", Advanced Materials, vol. 35, p.2208224 (1-9) (2023)
4. Multifunctional nano-heterogeneous Ni(OH)2/NiFe catalysts on silicon photoanode toward efficient water and urea oxidation, Applied Catalysis B: Environmental, 317, 121765 (2022).
5. Low-crystalline AuCuIn catalyst for gaseous CO2 electrolyzer, Advanced Science, 9, 2104908 (2022).
6. 2-Dimensional metal organic frameworks and covalent organic frameworks for electrocatalysis: Distinct merits by the reduced dimension, Advanced Energy Materials, 12, 2003990 (2022).s



Personal link

- <https://sites.google.com/view/ospl>
- <https://scholar.google.com/citations?user=7kWEjDAAAAAJ&hl=ko&oi=ao>

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02



Souman Rudra

Professor
University of Agder

Biography

Dr. Souman Rudra is an experienced Professor with a demonstrated history of working in the higher education institute. He is currently working at the University of Agder, Norway, since 2013. He is also the acting leader of the Bioenergy and thermal energy group. He was nominated as European Climate Pact Ambassador from 2021 to 2022. He has a strong education professional with a Doctor of Philosophy (Ph.D.) focused in Energy Engineering from Aalborg University in 2013. He obtained his master's in engineering degree in Energy Engineering in 2010 from Ajou University, South Korea. He was also a visiting Scholar at the University of Alberta in Canada, the University of Twente in the Netherlands, and the University of Birmingham in England. Dr. Souman's research topics include renewable energy, mathematical modeling of various thermal power systems, aspen plus, power plants, refrigeration cycles, biofuels, etc. Moreover, he has experience in experimental and computational hydrothermal processing of organic matter. He is currently conducting several external funded projects (including Ph.D. projects). So far, about 38 of his research articles have been published internationally. In the last 12 years, he has participated in about 16 international seminars and conferences. He maintains an extensive international network and has worked on various projects with several universities in Europe, Africa, North America, and Asia (Aalborg University, University of Alberta, University of Glasgow, Ajou University, CUET, IIT, Tanta University, and others).

Research Area

- Renewable Energy, Biomass Conversion, Thermal Energy, Energy System, Process Design and Simulation, HVAC, Fluid Mechanics.

Personal link

- <https://www.uia.no/english/about-uia/employees/soumanr/index.html>

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02: Next generation of renewable energy technologies



Suk Won Cha

Professor
Seoul National University

Biography

Since 2005, Prof. Suk Won Cha has been an assistant, associate and full professor in the Department of Mechanical Engineering at Seoul National University. He served as the Associate Dean at the College of Engineering from 2013 to 2015 and the Associate Dean of Office of International Affairs at Seoul National University from 2019 to 2021. Moreover, he served as the President of Advanced Institute of Convergence Technology, a university-government joint institute founded by Seoul National University and Gyeonggi Province of Korea from 2023 to 2025. Currently, Prof. Cha serves as the Director of Institute of Engineering Research at Seoul National University.

Prof. Cha studied engineering at Seoul National University for B.S. degree and at Stanford University for M.S. and Ph.D. degree. For the past decades, Prof. Cha investigated advanced electrochemical cells from materials to system level. He pioneered innovative vacuum fabrication process for electrolyte/electrode materials, optimal energy management strategy of such systems, publishing more than 200 papers – including covers and frontispiece - in relevant journals such as Journal of Materials Chemistry, Advanced Energy Materials, Applied Energy, Journal of Power Sources, CIRP Annals-Manufacturing Technology, IEEE Transactions on Control Systems Technology and so on. Also, Prof. Cha is well-recognized as a co-author of “Fuel Cell Fundamentals (Wiley and Sons)” - a world-wide bestseller in fuel cells research (>5000 citations according to google scholar).

As a recognition of his contribution to academic society, Prof. Cha is the recipient of several awards including Fuel Cells Research Award from The Korean Electrochemical Society, Academic Excellence Award from The Korean Society of Automotive Engineers, Highly Commended Paper of the Year from International Journal of Precision Engineering and Manufacturing – Green Technology and Springer Award for Most Cited Author of the Year from International Journal of Automotive Technology.



Due to his profound knowledge and rich experience, Prof. Cha's academic activities includes the following:

- Editor-In-Chief, International Journal of Precision Engineering and Manufacturing–Green Technology (Q1, 2022-)
- General Member, National Academy of Engineering of Korea (2024-)
- World Top 2% Researcher in Career by Elsevier (2022-)
- Editor, International Journal of Automotive Technology (2018 -)

Research Area

- Fuel Cells
- Electrolyses
- Thin film processes of catalyst, electrolytes and bipolar plates
- Optimal energy management strategy for EV, HEV and FCEV
- Data-Driven modeling and predictive diagnosis of batteries, hybrid and fuel cell systems.

Personal link

- <https://recl.snu.ac.kr>
- <https://scholar.google.com/citations?user=IZmrE08AAAAJ&hl=en>

Call topic

- HORIZON-CL5-2026-04-Two-Stage-D3-02: Next generation of renewable energy technologies



Tae Jin Kang

Principal Researcher
Institute for Advanced Engineering

Biography

Dr. Tae-Jin Kang is an expert with over 15 years of research experience in the field of energy and environment. He earned his Master's and Ph.D. degrees in Energy Engineering from Ajou University. Dr. Kang has conducted research and project planning in energy and environmental fields at institutions and companies such as Ajou University, Korea Research Institute of Chemical Technology, Wonik Materials, and Korea Nexlen. Currently, he serves as a Principal Researcher at the Clean Energy Transition Center of the Korea Institute of Advanced Technology. His primary focus is on developing energy transition and resource recovery technologies, including low-carbon fuels, biomass, CCUS, and waste plastic pyrolysis. He has achieved outstanding results in reactor and adsorbent

development through industry-academia projects.

Over the past 15 years, Dr. Kang has contributed to more than 30 projects in energy and environmental research at institutions such as Ajou University and the Korea Research Institute of Chemical Technology, focusing on low-carbon fuels, CCUS, and waste plastic pyrolysis. He has published over 30 research papers and holds more than 10 patents. As a Principal Researcher at the Institute for Advanced Engineering (IAE), he currently leads demonstration and commercialization research initiatives.

Research Area

Dr. Tae-Jin Kang primary research areas to date include upgrading of low-grade fuels and thermochemical conversion, CCUS (Carbon Capture, Utilization, and Storage), pyrolysis and gasification using fluidized beds, reactor design and catalytic gasification, and waste plastics to energy. Currently, His current research interests focus on Life Cycle Assessment (LCA) and Techno-Economic Analysis (TEA).

Dr. Kang, along with his team, possesses exceptional expertise in process design and reactor optimization. He holds over 20 domestic and international patents related to catalyst manufacturing, system configuration, and reaction optimization, and has published more than 30 papers in the energy and environment field.

With extensive experience in industry-academia-research collaborations, Dr. Kang has a strong understanding of demonstration and commercialization processes. He actively contributes to the academic community, currently serving as the Strategic Planning Director of the Korea Energy and Climate Change Society and as a committee member of the Fluidized Bed Division of the The Korean Institute of Chemical Engineers.

Personal link

- https://www.researchgate.net/profile/Tae-Jin-Kang-2?ev=hdr_xprf

Call topic

- HORIZON-CL5-2026-09-D3-05: Development of iVT-Based Multi-Biomass Gasification-CHP Technology
- HORIZON-CL5-2027-03-D3-31: Development of Flexible Operation Systems Using Thermoelectric Devices Linked with Renewable Energy and Next-Generation Dry Adsorbents

Korea-EU Horizon Europe Researchers Networking Forum on Energy



Taehyo Kim

Principal Researcher
Institute for Advanced Engineering

Biography

Taehyo Kim is a principal researcher of the Low Carbon Energy Group at the Korea Institute of Industrial Technology (KITECH). He joined the Commonwealth Scientific and Industrial Research Organization (CSIRO) in August 2019, where he worked as a postdoctoral researcher in Flexible Electronics Laboratory (FEL). He obtained his PhD from University of National Institute of Science and Technology (UNIST) in the Department of Energy and Chemical Engineering. His research interests are in the area of nano materials and devices for renewable energy source.

I currently focus on developing large-area coating using slot-die for photovoltaics and ultrasonic spray systems, electrochemical materials for energy storage or production such as fuel cells and secondary batteries. Especially, I'm interested in eco-friendly solid electrolyte materials for all solid state batteries.

I have not participated in EU collaborative research project. but I have various experience about collaborative project many country during Ph. D research.

Research Area

Main research fields is eco-friendly solid electrolyte materials for all solid state batteries.

Normally, sulfide based solid electrolyte is toxic due to H₂S generation under ambient air. I focus on eco-friendly solid electrolyte materials for all solid state batteries.

I have 3 SCI papers with 3 patents.

Personal link

• <https://scholar.google.com/citations?user=F3QkW5cAAAAJ&hl=en>

Call topic

• HORIZON-CL5-2027-06-Two-Stage-D2-07

Korea-EU Horizon Europe Researchers Networking Forum on Energy

